

Please add Claims 90 through 182 as follows:

--90. An apparatus for deicing aircraft

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comprising:

a vehicle;

a boom having an end supported by the vehicle and a free end;

a compressor unit mounted on the boom, said compressor unit comprising (a) a hydraulic motor having an output and (b) a centrifugal compressor operatively connected to the hydraulic motor output and having an impeller and an air outlet; and *not shown*

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a deicer air jet nozzle connected at the free end of the boom and operatively coupled to the air outlet of the centrifugal compressor for receiving air and discharging the air for a deicer application.

91. An apparatus according to Claim 90, and further comprising a hydraulic pump mounted on said vehicle and hydraulic feed lines extending from said hydraulic pump to said hydraulic motor on said boom for supplying hydraulic fluid under pressure to said hydraulic motor.

92. An apparatus according to Claim 91, wherein said vehicle includes a vehicle engine for supplying power to said hydraulic pump. *not shown*

93. An apparatus according to Claim 90, wherein said vehicle includes a vehicle engine for supplying power for said hydraulic motor.

*Be*  
94. An apparatus according to Claim 90, wherein said centrifugal compressor is a gear-driven centrifugal compressor. *not shown*

95. An apparatus according to Claim 90, wherein said deicer air jet nozzle defines an axisymmetric contour having a converging portion.

96. An apparatus according to Claim 90, and further comprising a fluid nozzle mounted on said deicer air jet nozzle, a source of deicing fluid, a supply tube interconnecting said source of deicing fluid and fluid nozzle, and a fluid pump for pumping deicing fluid from the source of deicing fluid and through the supply tube and fluid nozzle.

97. An apparatus according to Claim 90, wherein said centrifugal compressor forces air through said deicer air jet nozzle at about 100 pounds per minute.

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98. An apparatus for deicing aircraft comprising:  
a vehicle;  
a boom having an end mounted on the vehicle and a free end;

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a compressor unit supported by the boom, said compressor unit comprising (a) a motor having an output and (b) a centrifugal compressor operatively connected to the motor output and having an impeller and an air outlet; and  
a deicer air jet nozzle connected at the free end of the boom and operatively coupled to the air outlet of the centrifugal compressor for receiving air and discharging the air for a deicer application.

99. An apparatus according to Claim 98, wherein said centrifugal compressor forces air through said deicer air jet nozzle at about 100 pounds per minute.

100. An apparatus according to Claim 98, wherein said motor comprises a hydraulic motor, said apparatus

further including a hydraulic pump and hydraulic feed lines extending from said hydraulic pump to said hydraulic motor for supplying hydraulic fluid under pressure to said hydraulic motor.

101. An apparatus according to Claim 100, wherein said hydraulic pump is mounted on said vehicle, and said hydraulic feed lines extend from said hydraulic pump to said hydraulic motor on said boom for supplying hydraulic fluid under pressure to said hydraulic motor.

102. An apparatus according to Claim 101, further including an engine mounted on said vehicle for supplying power to said hydraulic pump.

103. An apparatus according to Claim 98, wherein said motor comprises a hydraulic motor.

104. An apparatus according to Claim 103, further including an engine mounted on said vehicle for supplying power for said hydraulic motor.

105. An apparatus according to Claim 98, wherein said deicer air jet nozzle defines an axisymmetric contour having a converging portion.

106. An apparatus according to Claim 98, and further comprising a fluid nozzle mounted on said deicer air jet nozzle, a source of deicing fluid, a supply tube interconnecting said source of deicing fluid and fluid nozzle, and a fluid pump for pumping deicing fluid from the source of deicing fluid and through the supply tube and fluid nozzle.

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107. An apparatus for deicing aircraft comprising:  
a vehicle;  
a boom having an end mounted on the vehicle and a free end;  
a compressor unit supported by the boom, said compressor unit comprising (a) a motor having an output and (b) a gear-driven centrifugal compressor operatively connected to the motor output and having an impeller and an air outlet; and  
a deicer air jet nozzle connected at the free end of the boom and operatively coupled to the air outlet of the

centrifugal compressor for receiving air and discharging the air for a deicer application.

108. An apparatus according to Claim 107, wherein said centrifugal compressor forces air through said deicer air jet nozzle at about 100 pounds per minute.

*Real*  
109. An apparatus according to Claim 107, wherein said motor comprises a hydraulic motor, said apparatus further including a hydraulic pump and hydraulic feed lines extending from said hydraulic pump to said hydraulic motor.

110. An apparatus according to Claim 109, wherein said hydraulic pump is mounted on said vehicle, and said hydraulic feed lines extend from said hydraulic pump to said hydraulic motor on said boom for supplying hydraulic fluid under pressure to said hydraulic motor.

111. An apparatus according to Claim 110, wherein said vehicle includes a vehicle engine for supplying power to said hydraulic pump.

112. An apparatus according to Claim 107, wherein said motor is a hydraulic motor.

113. An apparatus according to Claim 112, wherein said vehicle includes a vehicle engine for supplying power for said hydraulic motor.

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114. An apparatus according to Claim 107, wherein said deicer air jet nozzle defines an axisymmetric contour having a converging portion.

115. An apparatus according to Claim 107, and further comprising a fluid nozzle mounted on said deicer air jet nozzle, a source of deicing fluid, a supply tube interconnecting said source of deicing fluid and fluid nozzle, and a fluid pump for pumping deicing fluid from the source of deicing fluid and through the supply tube and fluid nozzle.

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116. A deicer assembly comprising:  
a centrifugal compressor mounted on a boom of a vehicle, said centrifugal compressor having an input shaft,

an impeller and an air outlet, wherein said centrifugal compressor is a gear-driven centrifugal compressor; and a hydraulic motor having an output coupled to said gear-driven centrifugal compressor.

117. A method for deicing aircraft comprising the steps of:

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compressing air within a centrifugal compressor supported by a vehicle boom by driving a motor coupled to the centrifugal compressor; and

discharging the air from a deicer air jet nozzle attached to the end of the vehicle boom such that air is forced outward from the deicer air jet nozzle at about 100 pounds per minute.

118. A method according to Claim 117, wherein the air is discharged through the air jet nozzle that defines an axisymmetric contour having a converging portion.

119. A method according to Claim 117, and further comprising the step of hydraulically driving the motor, wherein the motor comprises a hydraulic motor.



120. A method according to Claim 119, and further comprising the step of driving the hydraulic motor by a hydraulic pump located on a vehicle.

121. A method according to Claim 120, and further comprising the step of operating the hydraulic pump from the engine used for driving the vehicle.

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122. A method according to Claim 119, and further comprising the step of operating the hydraulic motor from the engine used for driving the vehicle.

123. A method according to Claim 119, and wherein the centrifugal compressor is a gear-driven centrifugal compressor.

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124. An apparatus for deicing aircraft comprising:  
a vehicle;  
a boom having an end mounted on the vehicle and a free end;  
a compressor unit supported by the boom, said compressor unit comprising (a) a hydraulic motor having an output and (b) a centrifugal compressor operatively connected

to the hydraulic motor output and having an impeller and an air outlet; and

a deicer air jet nozzle located at the boom and operatively coupled to the air outlet of the centrifugal compressor for receiving air and discharging the air for a deicer application.

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125. An apparatus according to Claim 124, and further comprising a hydraulic pump mounted on said vehicle and hydraulic feed lines extending from said hydraulic pump to said hydraulic motor on said boom for supplying hydraulic fluid under pressure to said hydraulic motor.

126. An apparatus according to Claim 125, wherein said vehicle includes a vehicle engine for supplying power to said hydraulic pump.

127. An apparatus according to Claim 124, wherein said vehicle includes a vehicle engine for supplying power for said hydraulic motor.

128. An apparatus according to Claim 124, wherein said centrifugal compressor is a gear-driven centrifugal compressor.

129. An apparatus according to Claim 124, wherein said deicer air jet nozzle defines an axisymmetric contour having a converging portion.

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130. An apparatus according to Claim 124, and further comprising a fluid nozzle mounted on said deicer air jet nozzle, a source of deicing fluid, a supply tube interconnecting said source of deicing fluid and fluid nozzle, and a fluid pump for pumping deicing fluid from the source of deicing fluid and through the supply tube and fluid nozzle.

131. An apparatus according to Claim 124, wherein said centrifugal compressor forces air through said deicer air jet nozzle at about 100 pounds per minute.

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132. An apparatus for deicing aircraft comprising:  
a vehicle;

a boom having an end mounted on the vehicle and a free end;

a compressor unit supported by the boom, said compressor unit comprising (a) a motor having an output and (b) a centrifugal compressor operatively connected to the motor output and having an impeller and an air outlet; and

a deicer air jet nozzle located at the boom and operatively coupled to the air outlet of the centrifugal compressor for receiving air and discharging the air for a deicer application.

133. An apparatus according to Claim 132, wherein said centrifugal compressor forces air through said deicer air jet nozzle at about 100 pounds per minute.

134. An apparatus according to Claim 132, wherein said motor comprises a hydraulic motor, said apparatus further including a hydraulic pump and hydraulic feed lines extending from said hydraulic pump to said hydraulic motor for supplying hydraulic fluid under pressure to said hydraulic motor.

135. An apparatus according to Claim 134, wherein said hydraulic pump is mounted on said vehicle, and said hydraulic feed lines extend from said hydraulic pump to said hydraulic motor on said boom for supplying hydraulic fluid under pressure to said hydraulic motor.

136. An apparatus according to Claim 135, further including an engine mounted on said vehicle, said engine supplying power to said hydraulic pump.

137. An apparatus according to Claim 132, wherein said motor comprises a hydraulic motor.

138. An apparatus according to Claim 137, further including an engine mounted on said vehicle for supplying power for said hydraulic motor.

139. An apparatus according to Claim 132, wherein said deicer air jet nozzle defines an axisymmetric contour having a converging portion.

140. An apparatus according to Claim 132, and further comprising a fluid nozzle mounted on said deicer air

jet nozzle, a source of deicing fluid, a supply tube interconnecting said source of deicing fluid and fluid nozzle, and a fluid pump for pumping deicing fluid from the source of deicing fluid and through the supply tube and fluid nozzle.

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141. An apparatus for deicing aircraft comprising:

a vehicle;

a boom having an end mounted on the vehicle and a

free end;

a compressor unit supported by the boom, said compressor unit comprising (a) a motor having an output and (b) a gear-driven centrifugal compressor operatively connected to the motor output and having an impeller and an air outlet; and

a deicer air jet nozzle located at the boom and operatively coupled to the air outlet of the centrifugal compressor for receiving air and discharging the air for a deicer application.

142. An apparatus according to Claim 141, wherein said centrifugal compressor forces air through said deicer air jet nozzle at about 100 pounds per minute.

143. An apparatus according to Claim 141, wherein said motor comprises a hydraulic motor, said apparatus further including a hydraulic pump and hydraulic feed lines extending from said hydraulic pump to said hydraulic motor.

144. An apparatus according to Claim 143, wherein said hydraulic pump is mounted on said vehicle, and said hydraulic feed lines extend from said hydraulic pump to said hydraulic motor on said boom for supplying hydraulic fluid under pressure to said hydraulic motor.

145. An apparatus according to Claim 144, wherein said vehicle includes a vehicle engine for supplying power to said hydraulic pump.

146. An apparatus according to Claim 141, wherein said motor is a hydraulic motor.

147. An apparatus according to Claim 146, wherein said vehicle includes a vehicle engine for supplying power for said hydraulic motor.

148. An apparatus according to Claim 141, wherein said deicer air jet nozzle defines an axisymmetric contour having a converging portion.

149. An apparatus according to Claim 141, and further comprising a fluid nozzle mounted on said deicer air jet nozzle, a source of deicing fluid, a supply tube interconnecting said source of deicing fluid and fluid nozzle, and a fluid pump for pumping deicing fluid from the source of deicing fluid and through the supply tube and fluid nozzle.

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150. A deicer assembly comprising:

a centrifugal compressor mounted on a boom of a vehicle, said centrifugal compressor having an input shaft, an impeller and an air outlet, wherein said centrifugal compressor is a gear-driven centrifugal compressor; and

a hydraulic motor having an output coupled to said gear-driven centrifugal compressor.

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151. A method for deicing aircraft comprising the steps of:



compressing air within a centrifugal compressor supported by a vehicle boom by driving a motor coupled to the centrifugal compressor; and

discharging the air from a deicer air jet nozzle located at the vehicle boom such that air is forced outward from the deicer air jet nozzle.

*Red* 152. A method according to Claim 151, wherein the air is discharged through the air jet nozzle that defines an axisymmetric contour having a converging portion.

153. A method according to Claim 151, and further comprising the step of hydraulically driving the motor, wherein the motor comprises a hydraulic motor.

154. A method according to Claim 153, and further comprising the step of driving the hydraulic motor by a hydraulic pump located on a vehicle.

155. A method according to Claim 154, and further comprising the step of operating the hydraulic pump from the engine used for driving the vehicle.

156. A method according to Claim 153, and further comprising the step of operating the hydraulic motor from the engine used for driving the vehicle.

157. A method according to Claim 153, and wherein the centrifugal compressor is a gear-driven centrifugal compressor.

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158. An apparatus according to Claim 124, wherein said deicer air jet nozzle is located at the free end of the boom.

159. An apparatus according to Claim 124, wherein said deicer air jet nozzle is supported by the boom.

160. An apparatus according to Claim 132, wherein said deicer air jet nozzle is located at the free end of the boom.

161. An apparatus according to Claim 132, wherein said deicer air jet nozzle is supported by the boom.

162. An apparatus according to Claim 141, wherein said deicer air jet nozzle is located at the free end of the boom.

163. An apparatus according to Claim 141, wherein said deicer air jet nozzle is supported by the boom.

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164. A method according to Claim 151, comprising the step of discharging the air from the deicer air jet nozzle at about 100 pounds per minute.

165. A method according to Claim 151, wherein the deicer air jet nozzle is located at the free end of the boom.

166. A method according to Claim 151, wherein the deicer air jet nozzle is supported by the boom.

167. A method according to Claim 117, wherein the air is discharged from the deicer air jet nozzle at about 12 pounds per square inch.

168. A method according to Claim 117, wherein the deicer air jet nozzle accelerates the air to sonic velocity and discharges the air at about 100 pounds per minute.

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169. A method according to Claim 151, wherein the air is discharged from the deicer air jet nozzle at about 12 pounds per square inch.

170. A method according to Claim 151, wherein the deicer air jet nozzle accelerates the air to sonic velocity and discharges the air at about 100 pounds per minute.

171. An apparatus according to Claim 94, wherein the gear driving steps up the revolutions per minute of the centrifugal compressor relative to the output of said hydraulic motor.

172. An apparatus according to Claim 171, wherein the step up gear ratio is 12.27:1.

173. An apparatus according to Claim 116, wherein the gear driving has a step up gear ratio.

174. An apparatus according to Claim 173, wherein the step up gear ratio is 12.27:1.

175. A method according to Claim 119, and further comprising the step of stepping up the revolutions per minute of the centrifugal compressor relative to the output of the motor by gear driving coupled between the centrifugal compressor and the motor.

176. A method according to Claim 117, and further comprising the step of discharging the air from the nozzle at above ambient temperature.

177. An apparatus according to Claim 128, wherein the gear driving steps up the revolutions per minute of the centrifugal compressor relative to the output of said hydraulic motor.

178. An apparatus according to Claim 177, wherein the step up gear ratio is 12.27:1.

179. An apparatus according to Claim 150, wherein the gear driving has a step up gear ratio.

180. An apparatus according to Claim 179, wherein the step up gear ratio is 12.27:1.

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181. A method according to Claim 153, and further comprising the step of stepping up the revolutions per minute of the centrifugal compressor relative to the output of the motor by gear driving coupled between the centrifugal compressor and the motor.

182. A method according to Claim 151, and further comprising the step of discharging the air from the nozzle at above ambient temperature.--

#### REMARKS

Favorable consideration hereof is earnestly solicited.

Claims 90 through 182 are pending, with Claims 90, 98, 107, 116, 117, 124, 132, 150, and 151 being independent. Claim 1 has been canceled without prejudice. Claims 90 through 182 have been added.